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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/783,066	02/20/2004	John D. LeaSure	30644-xx	6299

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EXAMINER

BERGIN, JAMES S

ART UNIT PAPER NUMBER

3641

DATE MAILED: 10/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/783,066

Applicant(s)

LEASURE, JOHN D.

Examiner

James S. Bergin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>2/20/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 2/20/2004 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. Specifically the IDS lists European Search Report, EP 03 10 0462, 23 July 2003, Matthijssen. However, no copy of this document has been found in the file. An attempt was made on 10/19/2005 to telephone Mr. Joseph T. Guy to have the missing document faxed to the examiner. In response to this call Mr. Guy left a message on 10/20/2005 stating that the inclusion of the EP search report on the IDS was unintentional and requested that the examiner strike through the reference to this document. No EP search has been conducted on this invention and the EP Search Report number produces no hits when entered on the EPO website.

Specification

2. The disclosure is objected to because of the following informalities: the status of the parent application, US Pat Application 10/119,912, now abandoned, needs to be updated in paragraph [0001]. Correction is required.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 4, 7, 8 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Elliott (US 6,916,354 B2).

Regarding claims 1, 7, 8 and 10, Elliott discloses a composite bullet comprising a tungsten ballast (col. 3, lines 50-57) encased in an organic binder, the binder comprising a thermoplastic elastomer such as Pebax, a polyether block amide (tables 2, 4 & 5.; col. 4, line 55 – col. 5, lines 1-31), the bullet having a specific gravity in the range of 10.5g/cc to 12.0 g/cc.

Regarding claim 4, Elliott discloses that the binder can comprise a blend of thermoplastic elastomers, such as polyamide elastomers, polyester elastomers, etc. (col. 4, line 65 – col. 5, line 10).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2, 3, 5, 9, 17 and 22-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elliott (US 6,916,354 B2).

Elliott discloses a composite bullet comprising a tungsten ballast (col. 3, lines 50-57) encased in an organic binder, the binder comprising a thermoplastic elastomer such as Pebax, a polyether block amide (tables 2, 4 & 5.; col. 4, line 55 – col. 5, lines 1-31). Elliott discloses in col. 5, lines 20-22, that *“the binder, including other processing aids, is preferably present in the composite in an amount of about 1-10%, or about 2-6%, by weight of the composite”*. In tables 2, 4 and 5 the fractional weights of examples of Elliott's binder are shown and it appears that Pebax 7233 comprises about 0.88. Elliott further discloses that the binder can comprise a blend of thermoplastic elastomers, such as polyamide elastomers, polyester elastomers, etc. (col. 4, line 65 – col. 5, line 10).

Regarding claims 9 and 25, Elliott discloses in tables 2-6 that the fractional weight of tungsten in the ballast portion of the composition is 0.975, which one might interpret as consisting essentially of tungsten. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to comprise the ballast portion of Elliott's composition as consisting essentially of tungsten, to alter the specific gravity of the bullet in a desired way and/or since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claim 17, Elliott does not specifically disclose that the binder comprises about 10-30% polyether block amide (Pebax) by weight. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to vary the composition of the binder such that it comprised 10-30% polyether block amide (Pebax) by weight, so as to alter the specific gravity of the bullet in a

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desired manner and/or since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding claims 2, 22, Elliott's composite bullet has a specific gravity in the range of 10.5g/cc to 12.0 g/cc (col. 5, lines 25-29). Elliott discloses that the tungsten ballast used in the composite is preferably in an amount of about 80%-99% by weight of the composite (col. 3, lines 50-53).

However, Elliott does not disclose that the projectile comprises 6-66% by weight the tungsten ballast. Nor does Elliott disclose that the projectile comprises 34-94% by weight the polyether block amide (Pebax) binder.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to vary the composition of the binder such that it comprised 34-94% by weight the polyether block amide (Pebax) binder and 6-66% by weight the tungsten ballast, so as to alter the specific gravity of the bullet in a desired manner and/or since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding claim 3, Elliott does not disclose that the projectile comprises 45-49% by weight the tungsten ballast. Nor does Elliott disclose that the projectile comprises 51-55% by weight the polyether block amide (Pebax) binder.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to vary the composition of the binder such that it comprised 51-55%

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by weight the polyether block amide (Pebax) binder and 45-49% by weight the tungsten ballast, so as to alter the specific gravity of the bullet in a desired manner and/or since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding claim 5, Elliott discloses that the binder can comprise a blend of thermoplastic elastomers, such as polyamide elastomers, polyester elastomers, etc. (col. 4, line 65 – col. 5, line 10). However, Elliott does not disclose that the binder comprises about 10% to about 30% polyether block amide (Pebax) by weight and about 70 to about 90% by weight the second resin/ elastomer. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to vary the composition of the binder such that it comprised 10-30% polyether block amide (Pebax) by weight, and 70 to about 90% by weight the second resin/ elastomer so as to alter the specific gravity of the bullet in a desired manner and/or since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding claims 23 and 24, Elliott's composite bullet has a specific gravity in the range of 10.5g/cc to 12.0 g/cc (col. 5, lines 25-29).

Regarding claim 26, Elliott discloses that the binder can comprise a blend of thermoplastic elastomers, such as polyamide elastomers, polyester elastomers, etc. (col. 4, line 65 – col. 5, line 10).

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7. Claims 13-16 and 18-21, are rejected under 35 U.S.C. 103(a) as being unpatentable over Elliott (US 6,916,354 B2) in view of Ikawa et al. (US 6,617,383 B2).

Elliott does not specifically disclose that the projectile comprises a plasticizer such as n-butylbenzene sulfonamide. However, Ikawa et al. disclose a thermoplastic elastomer composition comprising the plasticizer, n-butylbenzene sulfonamide, which addition confers improved processability to the elastomer composition (col. 1, lines 59 – col. 2, line 5; col. 4, lines 12-20). In view of Ikawa et al., it would have been obvious to one of ordinary skill in the art at the time that the invention was made to include the plasticizer, n-butylbenzene sulfonamide, in the composition of Elliott's composite projectile, so as to confer improved processability thereto.

8. Claims 6, 11, and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elliott (US 6,916,354 B2) in view of Bray et al. (6,048,379).

Regarding claims 6, 27 and 28, Elliott discloses that the binder can comprise a blend of thermoplastic elastomers, such as polyamide elastomers, polyester elastomers, etc. (col. 4, line 65 – col. 5, line 10). However, Elliott does not specifically disclose that the polymeric binder Nylon can be added as a component of the binder blend.

Bray et al. disclose the use of Nylon 12 as a binder in a projectile composite, the composite including tungsten, the Nylon 12/ tungsten composite having equal or superior impact strength when compared to a lead projectile (col. 19, lines 19-25). In view of Bray et al., it would have been obvious to one of ordinary skill in the art at the

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time that the invention was made to add Nylon 12 to Elliott's blend of binders, to positively influence the impact strength of the composite projectile.

Regarding claim 11, 29 and 30, Elliott discloses the addition of strength enhancing agents to the binder (col. 5, lines 10-14) but does not specifically disclose that the binder further comprises a fiber. However, Bray et al. discloses the use of Kevlar fibers in a tungsten/ polymeric binder composite in projectile applications so as to increase the tensile strength to the composite projectile, (col. 6, lines 25-38). In view of Bray et al., it would have been obvious to one of ordinary skill in the art at the time that the invention was made to add Kevlar fibers to the Elliott's binder blend, so as to increase the tensile strength of the composite projectile.

9. Claims 12, 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elliott (US 6,916,354 B2) in view of Belanger et al. (US 5,237,930).

Elliott discloses the addition of a surfactant such as a wax and a fluoropolymer to the binder (col. 5, lines 14-28). However, Elliott does not specifically state that these substances possess lubricating properties, although it could be convincingly argued that they do. In any event, Belanger discloses the addition of molybdenum disulfide to the binder to act as a lubricant (col. 5, lines 18-25; col. 6, lines 67-68). In view of Belanger et al., it would have been obvious to one of ordinary skill in the art at the time that the invention was made to add molybdenum disulfide to Elliott's binder to act as a lubricant.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Nottin et al. (EP 96,617) discloses a plastic composite projectile comprising the matrix material, polyamide. Amick (US 6,823,798 B2); Bilbury et al. (US 5,665,808) and Lowden et al. (US 5,963,776) disclose other relevant composite projectiles.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James S. Bergin whose telephone number is 571-272-6872. The examiner can normally be reached on Monday - Wednesday and Friday, 8.30 - 5.30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone can be reached on 571-272-6873. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



James S. Bergin



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